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Case Report

The reverse claw: Report of an extremely rare facial talon cusp

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ABSTRACT

Talon cusp is a rare developmental anomaly that occurs most commonly on the lingual side of the incisors. Occurrence of the labial talon cusp is rare in the dental literature. Till date only seven cases of isolated nonsyndromic labial talon cusps have been reported in the maxillary permanent dentition. However, a few cases of syndromic labial talon cusps and faciolingual talon cusps have been reported. The aim of our report is to highlight clinical and radiological features of this rare anomaly.

Key Words: Facial, labial, talon cusp

INTRODUCTION

Talon cusp is a prominent accessory cusp-like structure projecting from the cingulum area or the cementoenamel junction (CEJ) of the maxillary or mandibular teeth in both primary and permanent dentition.[1] This accessory cusp, which can vary in size, is formed by enamel and dentin, and may or may not have a projection of the pulp tissue.[2] This unusual dental anomaly was first described by Mitchell in 1892. It was thereafter named a Talon cusp by Mellor and Ripa due to its resemblance to an eagle's talon.[3,4] There are limited data available on the prevalence of talon cusps, which ranges from 0.06% to 7.7%.[2,5,6] The maxillary lateral incisors are the most commonly affected (67%) followed by the central incisors (24%) and canines (9%). This cusp is normally presented in the palatal or occlusal surfaces of the teeth.[7] Only few cases of talon cusps in facial surfaces of teeth were reported in the literature.[3,5,8-14]

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CASE REPORT

A 25-year-old female reported to the dental clinic with complaint of decayed tooth in the left back region of the lower jaw. On examination an elevation on the labial aspect of crown of the maxillary right permanent central incisor was noticed. The elevation was broader at the cervical area and gradually tapered toward the incisal edge to give a ridge-like appearance. The cervical area had light brown discoloration [Figure 1]. No abnormalities were noticed on the palatal surface of the tooth. A midline diastema existed between the two central incisors. The periapical area appeared to be normal. Normal responses were obtained on the pulp testing procedure. Intraoral periapical radiograph of the area revealed V-shaped radiopacity in relation to the coronal aspect of maxillary right central incisor, extending 1 mm below the incisal edge to the cementoenamel junction. The radiopacity of the V-shaped area was comparable to that of enamel. No pulpal or canal changes were observed. No changes in the periapical area were noticed [Figure 2]. Based on these clinical and radiological features diagnosis of facial talon cusp was made. A thorough oral prophylaxis was performed and the decayed molar was restored. As the patient had no complaints with the abnormal tooth (with facial talon) she was kept on a yearly periodic recall.

Figure 1: Photograph showing elevated area on the crown of the right central incisor extending from the cervical area to the incisal margin

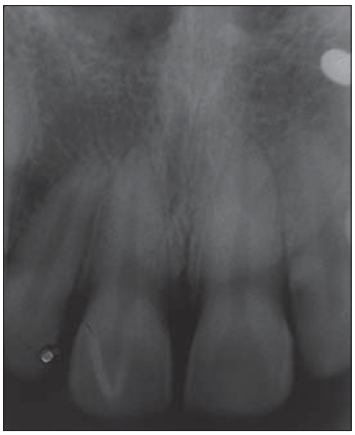

Figure 2: Intraoral periapical radiograph showing V-shaped radiopaque area overlapping the crown of right maxillary central incisor

DISCUSSION

Talon cusp consists of enamel, dentin, and varying extensions of pulp. It originates during the morphodifferentiation stage of tooth development. The exact etiology of this anomaly is controversial. Genetic and environmental factors, aberrant hyperactivity of dental lamina, outward folding of the inner enamel epithelium, altered endocrine functions, and a transient focal hyperplasia of the mesenchymal dental papilla might be responsible.[6,15]

The shape, size, and location of talon cusp may vary from a slight tubercle-like projection to a well-delineated prominent cusp extending from the cementoenamel junction to the incisal edge. In our case, the tubercle-like projection extending 1 mm below the incisal edge to the cementoenamel junction was observed. They may be found on the palatal/lingual or labial faces of the tooth, in primary or permanent dentition.[6] Talon cusp occurs more frequently in permanent than primary dentitions and shows a predilection for the maxilla over the mandible.[16] Males are affected more than females. Our case was of a 25-year-old female with talon cusp on permanent dentition in the maxillary arch. In vast majority of cases the talon cusp originates from the lingual surface of the tooth, on very rare occasions from the facial aspect of the tooth.[3,8-14] As a matter of fact only seven case reports of facial talon in permanent maxillary teeth have been found in the literature till date.[3,8-12,14] So far nine cases of faciolingual talon cusps have been reported.[14,17-22] Few archeological studies have reported of labial talon cusp in ancient skeletal remains.[23,24]

Hattab *et al.*[25] graded the lingual talon cusp from 1 (the most extreme form) to 3 (slightest form). Where as a classification for the labial talon cusp was suggested after examining the dentition of 301 skeletons from a pre-European contact American Indian population as follows.[24]

Stage 1

The slightest form, consists of a slightly raised triangle on the labial surface of an incisor extending the length of the crown, but not reaching the cementoenamel junction or the incisal edge.

Stage 2

The moderate form, is a raised triangle on the labial surface of an incisor that extends the length of the crown, does not reach the cementoenamel junction, but does reach the incisal edge.

Stage 3

The most extreme form, is a free-form cusp extending from the cementoenamel junction to the incisal edge on the labial surface of an incisor.[24] Based on this staging system, our case could be categorized into stage 2.

Radiographically, it may appear typically as a V-shaped radiopaque structure, as in true talon or semitalon, or be tubercle-like, as in trace talon, originating from the cervical third of the root. The radiopaque V-shaped structure is superimposed over the normal image of the crown of the tooth. This appearance varies with the shape and size of the cusp, and the angle at which the radiograph is taken.[3] Similar radiological findings were observed in our case.

The site of the junction of a cusp with the dental surface frequently allows the buildup of plaque, caries lesions,

and periodontal or pulpal inflammation. Other sequelae attributed to talon cusp are dental movement, irritation of soft tissues, occlusal trauma, speech or mastication problems, attrition, cusp fracture, and unfavorable esthetic aspects.[15,26] Discoloration of the cervicofacial aspect of crown due to extrinsic staining was observed in the our case due to abnormal morphology.

Management will depend on individual presentation and complications. Aesthetics may be a major concern if talon occurs on facial aspect. Occlusal interference and tooth displacement have also been reported. Caries susceptibility due to abnormal groove morphology has been observed in few other cases. Irritation and interference to tongue and buccal mucosa when occurring on the lingual and buccal side, respectively, have been reported.[27] Small talon cusps are asymptomatic and need no treatment.[3] Where there are deep developmental grooves, simple procedure such as pit and fissure sealants can be considered. In the case of occlusal interference reduction of bulk of the cusp and fluoride application can be carried out gradually over a period of 6-8 weeks. In the case of a fully matured tooth root canal therapy is advisable where as in immature teeth calcium hydroxide pulpotomy is the treatment of choice.[27] Orthodontic correction may become necessary when there is tooth displacement or malalignment of affected or opposing teeth.[3,27] Since there was no risk of pulpal exposure, caries formation or esthetic concern in our patient oral prophylaxis and periodic review was considered.

CONCLUSION

The aim of this report was to describe the clinical and radiological feature of an extremely rare anomaly of facial talon cusp. The information in this report would help the clinicians to identify such anomalies more efficiently and prevent further complications and inconvenience to patient.

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